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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,548	11/24/2003	Jonathan Richard Thorpe	282550US8X	4570

22850 7590 08/21/2007

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EXAMINER	
CAO, PHUONG THAO	
ART UNIT	**PAPER NUMBER**
2164	

NOTIFICATION DATE	DELIVERY MODE
08/21/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/720,548	THORPE, JONATHAN RICHARD	
	Examiner	Art Unit	
	Phuong-Thao Cao	2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-8 and 10-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 4-8 and 10-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In response to After-Final Amendment filed on 7/31/2007, the finality of the rejection is withdrawn and the amendment is entered.

2. Currently, claims 1, 2, 4-8 and 10-13 are pending.

Response to Arguments

3. Regarding Applicant's argument in Remarks/Arguments (page 7, last paragraph), the previous final office action contains a new ground of rejection not necessitated by Applicant's amendment. Therefore, the finality of the previous action has been withdrawn.

4. Applicant's arguments with respect to claims 1, 2, 4-8 and 10-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

5. Dependent claims 2, 4-6, 8 and 10-12 are objected to as being in improper dependent form. The article "A" at the beginning of each claim should be replaced by the article "The".

6. Regarding claim 13, it is unclear as whether claim 13 is an independent claim or dependent claim. If claim 13 is an independent claim, it should be rewritten to include all steps

of the method recited in claim 7. If claim 13 is a dependent claim of claim 7, then claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim since claim 13 does not add any steps/acts to further limit the subject matter of method as recited in claim 7. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "the search processor" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 2, 4, 5, 7, 8 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laaksonen et al. ("Content-Based Image Retrieval Using Self-Organizing Maps", published 1999) in view of Yoon et al. (US Patent No 6,621,926, effective filing date 02/04/2000) and Wolff (US Patent No 5,847,708, issued on 12/8/1998).

As to claim 1, Laaksonen et al. teaches:

"An information retrieval apparatus for searching a set of information items and displaying results of the search using a self-organizing map" (see Laaksonen et al., Abstract) apparatus comprising:

"a graphical user interface configured to display a representation of at least some of the information items as a n-dimensional array of display points within the self-organizing map with a display area, the information items each having a set of characterizing information features which include data representative of one or more video images" (see Laaksonen et al., [page 542, section 2 and 2.1] and [page 546, Figure 2]),

"a processor configured to train the self-organizing map, using color histograms for each video image, to an effect that the color histogram representing the video image of the information item when applied to an input of the self-organizing map as a feature vector identifies one of a plurality of output nodes, the output nodes being arranged to identify points within the self-organizing map" (see Laaksonen et al., [page 543, section 2.3] and [page 542, section 2.1, first paragraph] for training the levels of the TS-SOMs (i.e., SOMs) using feature vectors calculated from images wherein feature vector formed for describing the color of an image (i.e., color composition) can be interpreted as its color histogram),

"a user control configured to, in response to a user input, select a video image of an information item" (see Laaksonen et al., [page 542, section 2, the second paragraph] and [page 546, Figure 2]), and

"a search processor configure" (see Laaksonen et al., [page 544, first paragraph] for searching the data set).

"to search the set of information items by applying the user defined feature vector to the input of the self-organizing map to identify information items which include video images having color histograms corresponding to that of the user defined video image" (see Laaksonen et al., [page 542, section 2, second paragraph and section 2.1] and [page 544, first paragraph] for searching data set of the map using feature vector describing color of the image to identify the best matches)

However, Laaksonen et al. do not explicitly teaches:

"to form a color histogram of the user selected video image", and

"to generate a user defined feature vector from the user selected video image using the color histogram",

On the other hand, Yoon et al. teaches:

"to form a color histogram of the user selected video image" (see Yoon et al., [column 6, lines 55-57]), and

"to generate a user defined feature vector from the user selected video image using the color histogram" (see Yoon et al., Abstract and [column 4, lines 35-45]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yoon et al. into Laaksonen et al.'s system. Skilled artisan would have been motivated to do so to provide an effective feature (i.e., color histogram) to represent images based on color composition and support the generation of feature vectors as suggested in Laaksonen et al., [page 542, section 2.1]. In addition, both of the references (Laaksonen et al. and Yoon et al.) teach features that are directed to analogous art and they are directed to the same field of endeavor, such as, image retrieval system, using feature vector to identify the similarity, and representing images by its color information. This close relation between both of the references highly suggests an expectation of success.

However, Laaksonen et al. and Yoon et al. do not teach:

"a search processor operable to perform a related search with respect to the user selected video image by identifying, from the self-organizing map, information items which correspond to positions in the array which are neighbouring positions with respect to the array position corresponding to the user selected information item".

On the other hand, Wolff teaches:

"a search processor operable to perform a related search with respect to the user selected video image by identifying, from the self-organizing map, information items which correspond to positions in the array which are neighbouring positions with respect to the array position corresponding to the user selected information item" (see Wolff, [column 10, lines 30-45 and 52-60] and [page 5, lines 10-16] wherein a search for documents which are similar to the icon when user selects the icon is equivalent to Applicant's "related search" and similarity metrics of nearby icons, which must be identified to create a search query as described, is equivalent to information items identified from the map as in Applicant's claim language).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have incorporate the teaching of Wolff into Laaksonen et al. (as modified by Yoon et al.)'s system. As skilled artisan would have been motivated to do so as suggested by Wolff, [page 9, lines 55-65] to allow a user to quickly located related documents (e.g., text files, images) thereby the system is more effective. In addition, as Laaksonen et al. and Wolff pursue a system which uses a self-organizing map as a technique for retrieving and searching for information, adding a feature of performing a related search as disclosed provide users with more flexible and effective way to search for information using the map.

As to claim 2, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"wherein the search processor is configured to search the set of information items in accordance with a search query and to identify information items corresponding to the search

query, and the search processor is configured to generate the self-organizing map data of information items identified as a result of the search on the search query" (see Laaksonen et al., [page 542, section 2] and [page 546, Figure 2]).

As to claim 4, this claim is rejected based on arguments given above for rejected claim 1 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"wherein a number of dimension n is two and a position in the array is defined by x, y coordinates" (see Laaksonen et al., [page 542, section 2] for two-dimensional grid).

As to claim 5, this claim is rejected based on arguments given above for rejected claim 4 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"wherein the search processor is operable to perform a related search with respect to the user selected video image by identifying information items which correspond to positions in the array which are within a radius of positions from the array position corresponding to the user selected video image" (see Wolff, [column 10, lines 40-60] wherein the circle radius can be interpreted as the specificity of the desired search as claimed).

As to claim 7, Laaksonen et al. teaches:

"A method for searching a set of information items and displaying results of the search using a self-organizing map" (see Laaksonen et al., Abstract), the method comprising:

"displaying a representation of at least some of the information items as a n-dimensional array of display points within the self-organizing map with a display area, the information items each having a set of characterizing information features which include data representative of one or more video images" (see Laaksonen et al., [page 542, section 2 and 2.1] and [page 546, Figure 2]),

"training the self-organizing map, using color histograms for each video image, to an effect that the color histogram representing the video image of the information item when applied to an input of the self-organizing map as a feature vector identifies one of a plurality of output nodes, the output nodes being arranged to identify points within the self-organizing map" (see Laaksonen et al., [page 543, section 2.3] and [page 542, section 2.1, first paragraph] for training the levels of the TS-SOMs (i.e., SOMs) using feature vectors calculated from images wherein feature vector formed for describing the color of an image (i.e., color composition) can be interpreted as its color histogram),

"selecting a video image of an information item in response to a user input" (see Laaksonen et al., [page 542, section 2, the second paragraph] and [page 546, Figure 2]), and

"searching the set of information items by applying the user defined feature vector to the input of the self-organizing map to identify information items which include video images having color histograms corresponding to that of the user defined video image" (see Laaksonen et al., [page 542, section 2, second paragraph and section 2.1] and [page 544, first paragraph] for searching data set of the map using feature vector describing color of the image to identify the best matches)

However, Laaksonen et al. do not explicitly teaches:

"forming a color histogram of the user selected video image", and

"generating a user defined feature vector from the user selected video image using the color histogram",

On the other hand, Yoon et al. teaches:

"forming a color histogram of the user selected video image" (see Yoon et al., [column 6, lines 55-57]), and

"generating a user defined feature vector from the user selected video image using the color histogram" (see Yoon et al., Abstract and [column 4, lines 35-45]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Yoon et al. into Laaksonen et al.'s system. Skilled artisan would have been motivated to do so to provide an effective feature (i.e., color histogram) to represent images based on color composition and support the generation of feature vectors as suggested in Laaksonen et al., [page 542, section 2.1]. In addition, both of the references (Laaksonen et al. and Yoon et al.) teach features that are directed to analogous art and they are directed to the same field of endeavor, such as, image retrieval system, using feature vector to identify the similarity, and representing images by its color information. This close relation between both of the references highly suggests an expectation of success.

However, Laaksonen et al. and Yoon et al. do not teach:

"performing a related search with respect to the user selected video image by identifying, from the self-organizing map, information items which correspond to positions in the array which are neighbouring positions with respect to the array position corresponding to the user selected information item".

On the other hand, Wolff teaches:

"performing a related search with respect to the user selected video image by identifying, from the self-organizing map, information items which correspond to positions in the array which are neighbouring positions with respect to the array position corresponding to the user selected information item" (see Wolff, [column 10, lines 30-45 and 52-60] and [page 5, lines 10-16] wherein a search for documents which are similar to the icon when user selects the icon is equivalent to Applicant's "related search" and similarity metrics of nearby icons, which must be identified to create a search query as described, is equivalent to information items identified from the map as in Applicant's claim language).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have incorporate the teaching of Wolff into Laaksonen et al. (as modified by Yoon et al.)'s system. As skilled artisan would have been motivated to do so as suggested by Wolff, [page 9, lines 55-65] to allow a user to quickly located related documents (e.g., text files, images) thereby the system is more effective. In addition, as Laaksonen et al. and Wolff pursue a system which uses a self-organizing map as a technique for retrieving and searching for information, adding a feature of performing a related search as disclosed provide users with more flexible and effective way to search for information using the map.

As to claim 8, this claim is rejected based on arguments given above for rejected claim 7 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"searching information items in accordance with a search query" (see Laaksonen et al., Abstract and [page 542, section 2, second paragraph] and section 2.1),

"identifying information items corresponding to the search query" (see Laaksonen et al., [page 542, section 2.1, first paragraph]), and

"generating the self-organizing map of information items identified as a result of the searching the information items in accordance with the search query" (see Laaksonen et al., [page 542, section 2]).

As to claim 10, this claim is rejected based on arguments given above for rejected claim 7 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"wherein a number of dimension n is two and a position in the array is defined by x, y coordinates" (see Laaksonen et al., [page 542, section 2] for two-dimensional grid).

As to claim 11, this claim is rejected based on arguments given above for rejected claim 10 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"wherein the performing the related search with respect to the user selected video image by identifying information items which correspond to positions in the array which are within a radius of positions from the array position corresponding to the user selected video image" (see Wolff, [column 10, lines 40-60]).

As to claim 12, this claim is rejected based on arguments given above for rejected claim 11 and is similarly rejected including the following:

Laaksonen et al., Yoon et al. and Wolff teach:

"selecting including providing the user with a facility for specifying the radius of positions in accordance with a relative similarity of the information to be searched by search processor in the related search, with respect to the array position of interest" (see Wolff, [column 10, lines 40-60] wherein the circle radius can be interpreted as the specificity of the desired search as claimed).

As to claim 13, this claim is rejected based on arguments given above for rejected claim 7 and is similarly rejected.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laaksonen et al. ("Content-Based Image Retrieval Using Self-Organizing Maps", published 1999) in view of Yoon et al. (US Patent No 6,621,926, effective filing date 02/04/2000) and Wolff (US Patent No 5,847,708) as applied to claim 1 above, and further in view of Lin et al. ("A Self-organizing Sematic Map for Information Retrieval", 1991).

As to claim 6, Laaksonen et al., Yoon et al. and Wolff teach all limitations as recited in claim 1.

However, Laaksonen et al., Yoon et al. and Wolff do not teach:

"wherein the user control is operable to provide the user with a facility for specifying a number of neighbouring positions in accordance with a relative similarity of the information items to be searched by the search processor in the related search, with respect to the array position of interest".

On the other hand, Lin et al. teach:

"wherein the user control is operable to provide the user with a facility for specifying a number of neighbouring positions in accordance with a relative similarity of information items to be search by the search processor in the related search, with respect to the array position of interest" (see Lin et al., [page 266, column 1, paragraph 7] and Fig. 4a-c wherein the function of selecting nodes by drawing a rectangular region of nodes from the map is equivalent to Applicant's claim language and drawing a region of choice including any specific number of neighboring nodes around the node of interest).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate the teaching of Lin et al. into Laaksonen et al. (as modified by Yoon et al. and Wolff)'s system, since both Laaksonen et al. and Lin et al. pursue a system which uses a self-organizing map as a technique for retrieving and searching for information and adding a feature of perform a related search as disclosed provide users with more flexible and effective way to search for information using the map.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong-Thao Cao whose telephone number is (571) 272-2735. The examiner can normally be reached on 8:30 AM - 5:00 PM (Mon - Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong-Thao Cao
Art Unit 2164
August 9, 2007

C. Rones

CHARLES RONES
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